"Optimasi Rendemen Lemak Algae Cyanophyta (*Phormidium foveolarum)* Ditinjau dari Waktu Sonikasi dan Nisbah Pelarut Ekstraksi"

(Lipid Yield Optimation from Cyanophyta Algae (Phormidium foveolarum) as Revealed by Sonication Duration and Solvent Ratio)

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ABSTRACT

The objectives of this study are to determine the optimum lipid yield of cyanophyta algae (Phormidium foveolarum) as revealed by sonication duration, solvent ratio, and the interaction between the two factors. The extraction has been done by ultrasound cleaning bath in various duration of 0,5 hour, 1 hour, 1,5 hours, and 2 hours, using a mixture of chloroform, methanol, and aquadest with in various chloroform:methanol:aquadest ratio of 1:1,2:0,8; 1:1,6:0,8; 1:2:0,8. Data of lipid yield were analyzed using Randomized Completely Block Design (RBCD), 4 treatments and 3 replications with analysis period as the block. To test the difference between the treatment means, the Honestly Significant Difference (HSD) at 5% significance level were used.

The results of this study showed that the optimum lipid yield as revealed by sonication duration 0,854 ± 0,201 mg is obtained by 2 hours of sonication duration. The optimum lipid yield as revealed by solvent ratio 0,852 ± 0,115 mg is obtained by chloroform:methanol:aquadest ratio of 1:1,6:0,8. The optimum lipid yield as revealed by solvent ratio and sonication duration 0,328 ± 0,034 mg is obtained by chloroform:methanol:aquadest ratio of 1:1,6:0,8 and 1,5 hours of sonication.

Keywords: Phormidium foveolarum, *lipid extraction, sonication, solvent ratio.*